



Lockheed Martin

Radio Frequency Identification

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February 9, 2005

Agenda



- **Why RFID?**
- **Overview of the DoD Initiative**
- **DoD Strategic Imperative**
- **RFID Implementation**
- **Implementation Strategies**
- **Facility Planning**
- **Equipment Needs**
- **Data Capture**
- **Quality Assurance**
- **Training**
- **Cost Estimating**
- **Contracts**
- **Conclusion**

WHY RFID?



- **The Department of Defense Logistics Implementation Plan for Automatic Identification Technology (AIT) defines AIT as: “...a suite of technologies that enables the automated capture of source data, thereby enhancing the ability to identify, track, document, and control deploying and redeploying forces, equipment, personnel and sustainment cargo.”**
- **AIT enables the collection of data and the transmission of that data to the existing automated information systems (AISs). The suite of AIT technologies includes bar codes, optical memory cards (OMC), satellite tracking devices, as well as active and passive RFID.**
- **DoD will require all OEMs and suppliers to be RFID Capable by 1 January 2005**

Overview - The Elements of UID and RFID



LM Phase One - Assist LM Business Units to achieve required capability based on their business needs (minimize cost and schedule impact to technology, valuation and data insertions).

Part A: UID

New DoD
Solicitations/
Acquisitions
(effective 1/1/04)

Part B: UID

DoD Government
Property – GFP,
GFE, Special
Tooling & Equip,
Depot
(effective 1/1/05)

Part C: RFID

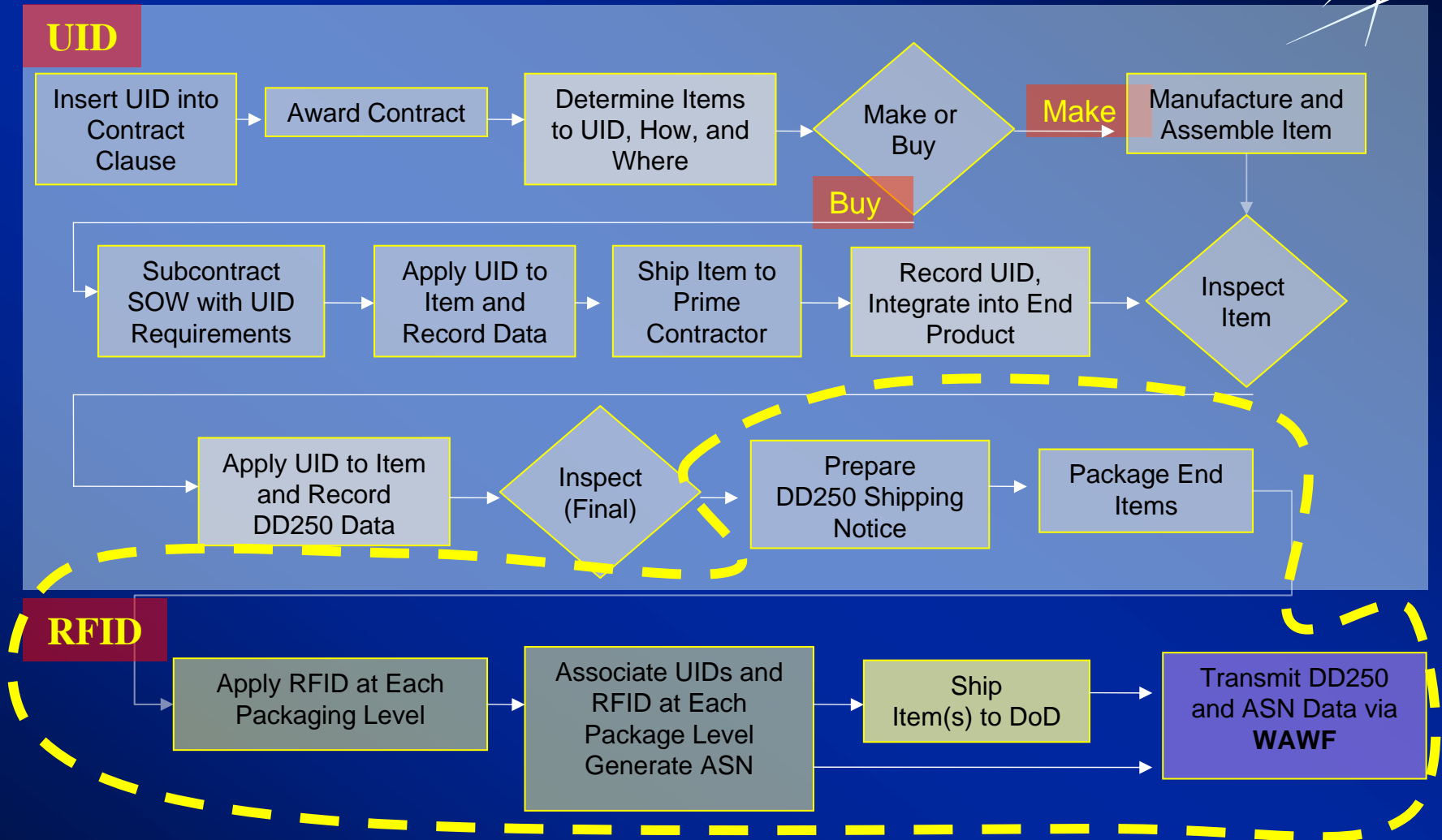
DoD Packaged
UID Items
(*07 Internal Pkgs)
All Exterior
Cases, Pallets
And Shipping
Containers
(post 10/04 contracts
w/2005 delivery date)

Part D: UID

(draft policy)
DoD
Legacy
Property In
Operational Use,
In Inventory
(pre 1/1/04
contracts)

LM Phase Two - Leverage DoD requirements, assist LM Business Units in continued process (cost benefit) enhancements and institutionalization.

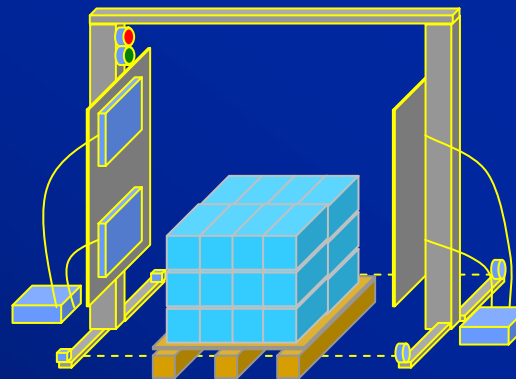
UID-RFID-WAWF Process Flow



DoD Strategic Imperative - Part C



- **DoD RFID initiative is the beginning of the autonomic technology journey**
 - **Asset visibility and management**
 - **Item identification**
 - **Data collection and exploitation (?)**
 - **Flexibility and adaptability**
 - **One of many knowledge enabling technologies**



RFID Implementation



- Phased approach
 - Phase I: DoD Initiative
 - DoD approach can be strategically incorporated into autonomic technology implementation
 - Stand-up shipping departments
 - Work with DoD to set the standard
 - Plan ahead for subsequent implementation phases
 - Work with EPCglobal and DoD
 - Will payoff in follow-on implementation phases
 - No interface, no room to complain

Implementation Strategies



- **Several ways to implement RFID**
 - **Corporate**
 - **Subcontracted services**
 - **3PL**
- **This presentation addresses corporate approach**
 - **Approach all implementation strategies as a team**
 - **Success is measured by effort**
 - **Corporate buy-in is essential**
 - **Limited effort will lead to limited success**
 - **Common approach across corporation**

Implementation Strategies



- **Determine what is required to be compliant**
- **Identify all internal organizations**
 - **Contracts**
 - **Finance**
 - **Legal**
 - **Procurement**
 - **Program Managers**
 - **Packaging/Shipping**
 - **Engage functions early and often**
- **Plan ahead, build to compliancy**
- **Design and build what you need**
- **Identify all suppliers that DD250 authority on behalf of your contract**
 - **Your company is ultimately responsible for the contract**
 - **Contract non-compliancy flows up and down**

Facility Planning



- **Required: a basic understanding of RFID technology**
- **Site surveys are an important building foundation**
 - **Consider cross-talking to help avoid data collisions**
 - **Obstructions are opportunities for whirlwinds of misdirected energy**
 - **Antenna Polarization will be important**
 - **Map product flow**
 - **Identify all areas that package and mark cartons and pallets**
 - **May not be necessary to standup shipping departments**
 - **Shipping departments are an opportunity for robust event tracking and data mining**
 - » **Can be deferred to a Phase II implementation**

Equipment Needs



– Determine equipment needs

- Get what you need, not what you want
 - Printers, readers, antennae)
 - Technology is moving at a rapid pace
 - Vendors want you to buy now, but can you play with all the toys
- EPCglobal/DoD compliant equipment
 - If your customer can't read it, they won't buy it
- Tag class
- Upgradeability

Data Capture



- **Determine data capture needs**
 - **RFID is the window dressing**
 - **It is all about the data**
 - **Perform data analysis early**
 - **Identify all transaction types**
 - **DD250, 1348, 1149**
 - **Will matter later on with GFP**
 - **Conservation is key for an initial implementation**
 - **Plan on capturing data. Don't waste the opportunity**
 - **Advanced Shipping Notice (ASN) will drive the data collection processes in the future**
 - **RFID data is associated with product information. Learn how to effectively nest RFID serial numbers with product information**
 - **Identify the conversion method for ASN development (EDI 856 format)**

Data Capture - continued



- **Identify how the data will be used in the future**
 - Limited Event tracking
 - Product information
 - Shipping information
 - Traceability
 - Design your database to accommodate this data now
 - Can be as simple as an Excel Spreadsheet
 - Data can be ported to robust database as your implementation matures
 - Identify what systems you need to interact with
 - Packing
 - WAWF
 - How are you going to do it?

Lockheed Martin develops and utilizes I Guides

Supplier



Reporting

Tracking

Utilization



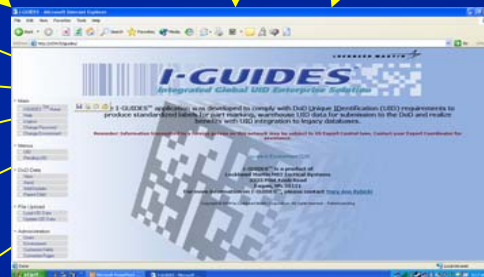
RFID



Supply



Logistics



DOD



Marking



Verify



RFID



Capture



Register

Compliance

Quality Assurance



- **Identify process changes**
 - **Packaging QA will change**
 - **Validate tags and serial number**
 - **Defense Contractor Management Agency (DCMA)**
 - **What is their level of understanding?**
 - **Have you briefed them regarding your implementation?**
 - **Did you include them in the planning process?**
 - **What do they expect when they inspect an RFID-enabled shipment?**
 - **If you do not know the answers to these questions, remember DCMA signs off on your DD250s**

Training



- **A real cost that won't go away**
 - Internal or subcontracted
 - Internal
 - You know your processes and customer requirements
 - If you subcontract training, expect to train the trainer unless it is equipment/application specific
 - Initial costs won't be that exorbitant
 - Will become more expensive in subsequent phases
 - Costs will come down as all organizations become accustomed to the new data requirements and how to process the data
 - Not limited to packing department (shipping, contracts, program management, etc)

Pilot Programs



- **Plan small – scalable pilots**
 - **Experience/lessons learned**
 - **Don't be afraid of the data – its all good**
 - **LM has run several pilots leading to implementations**
 - **Packaging/Inventory Control**
 - **Personnel tracking**
 - **Tool accountability (FOD is bad)**
 - **DoD frequency band not the most efficient for every application**

Cost Estimating



- **Identify 2005 and 2006 shipping needs**
- **Estimate tag requirements**
- **Identify all packaging departments**
 - **Sharing an RFID printer across sites may be less cost effective (labor costs \$\$)**
- **Estimate person-hours needed to process a tag or batch of tags**
 - **Be sure to include data capture and processing (ASNs are not free)**
 - **Printing should not be an issue**
 - **Rework is an issue because due to technology maturity**
 - **Don't forget Training and QA**
 - **Identify nonrecurring and recurring costs**

Contracts



- **The RFID DFARS has not been signed yet**
 - What is your customer's (PCO, KO) position on RFID?
 - Do they understand the DoD RFID requirement?
 - Do they understand the technology (even in laymen terms)?
 - Do they know what to expect when the DFARS is issued and they have to provide a non-funded contract mod?
 - What about your contract manager?
- **These issues should be addressed sooner than later**

Conclusion



- **An RFID Implementation does not have to be painful**
 - **Develop a cohesive team encompassing the right disciplines**
 - **Planning and communication goes a long way**
 - **Develop comprehensive planning documents**
 - **Don't look back. Learn from mistakes, they are probably the best lessons**
 - **You probably won't see a positive ROI with a Phase I implementation (defense contractors are not Walgreens)**
 - **A healthy ROI will come in subsequent implementations**

This is a marathon, not a sprint and it is not all about the DoD. It is about the future!



Questions ?